

XN5

STRAIN GAUGE AMPLIFIER 4 channels

Ref : XN5

S/N: X#####

Texys sensors are designed for data recording. If the user wants to include this sensor in a close loop system or active control, he must assume all responsibility.

Supply Voltage	7 to 16	V
Supply Current @ 12V -Amplifier only -4 bridges 120 Ohm - 4 bridges 350 Ohm	< 10 100 30	mA
Bridge supply voltage (internal)	5	V
Bridge gauge impedance	120 to 1000	Ω
Output signal	0-5*	V
Output impedance	100	Ω
Parameters Offset, Gain, Compensation		
Amp. Offset	by Tx/Rx **	0.4 to 4.6
Amp. Gain	by Tx/Rx	2.0 to 1000
Optional Gain	By resistor	1 to 10
Cut off frequency (1 pole filter)	max	19k
	default	105
Temperature measurement	Internal Temperature Probe (NTC) or external for remote application	
Offset drift with temperature	<10	mV
Gain drift with temperature	0.2	%
Temperature compensation	Amp. Offset	by self-learning in oven
	Amp. Gain	digital PPM (linear)
Max initial recommended bridge unbalance	±50	mV
Dimensions	XN5	41.5 x 17 x 4 Ø 2.2
Material	PCB	
Weight (without cable)	≤10	g
Vibration test	20Gpp 5'	
Shock	500	G
Accuracy Temp	-20 to +125	°C
Operating Temp	-40 to +125	°C
Storage Temp	-40 to +125	°C

* Limited by supply voltage.

**Tx/Rx only with Texense USBconnectXN5.

Sensor Readings		
Amp	V out @ 0 mV input	V out @ 10 mV input
#1		
#2		
#3		
#4		

Amplifier's Parameters			
Amp	Bridge Offset mV	Amp. Offset mV	Amp. Gain
#1	0	2500	200.0
#2	0	2500	200.0
#3	0	2500	200.0
#4	0	2500	200.0

Cut off frequency: 105 Hz

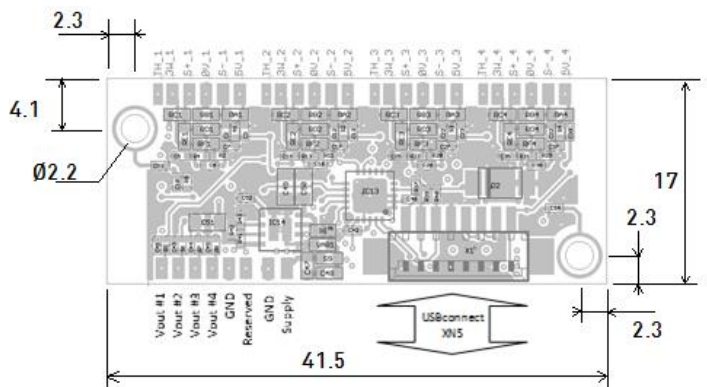
Material characteristics		
Material of the strain gauged part	Usual coeff %/°C	PPM/°C
Steel (default)	-0.033	-330
Titanium	-0.050	-500
Aluminum	-0.059	-590
No compensation (if XN5 is used with a compensated gauge bridge)	0	0

Digital communication commands with USB-connect XN5

115200 bauds / 8 bits data / 1 stop / no parity / no flow control

command	value	min	max	
front-end	'o'	0	-59.5	59.5
offset	'o'	2500	400	4600
gain	'g'	5000	20	10000
ppm	'p'	0	-3000	3000
Amb Temp.	'T'	0	0	1
compens	'L' (5hours max)	Start of a self-learning in oven.		
Init	'i'	Init of the compensation tables.		
header	'h'	Displays setting value.		
channel	'0'	Select channel 1/2/3/4 0 for all		

Wires : AWG26 <input checked="" type="checkbox"/>		Length :		
Th	E+/5V	E-/ 0V	S+	S-
Yellow	Red	Black	Green	White



Cut off frequency:

$$f_c = \frac{1}{(2 \times \pi \times [(OUTgain - 2) \times 2000 + 18000] \times 470E^{-12}}$$

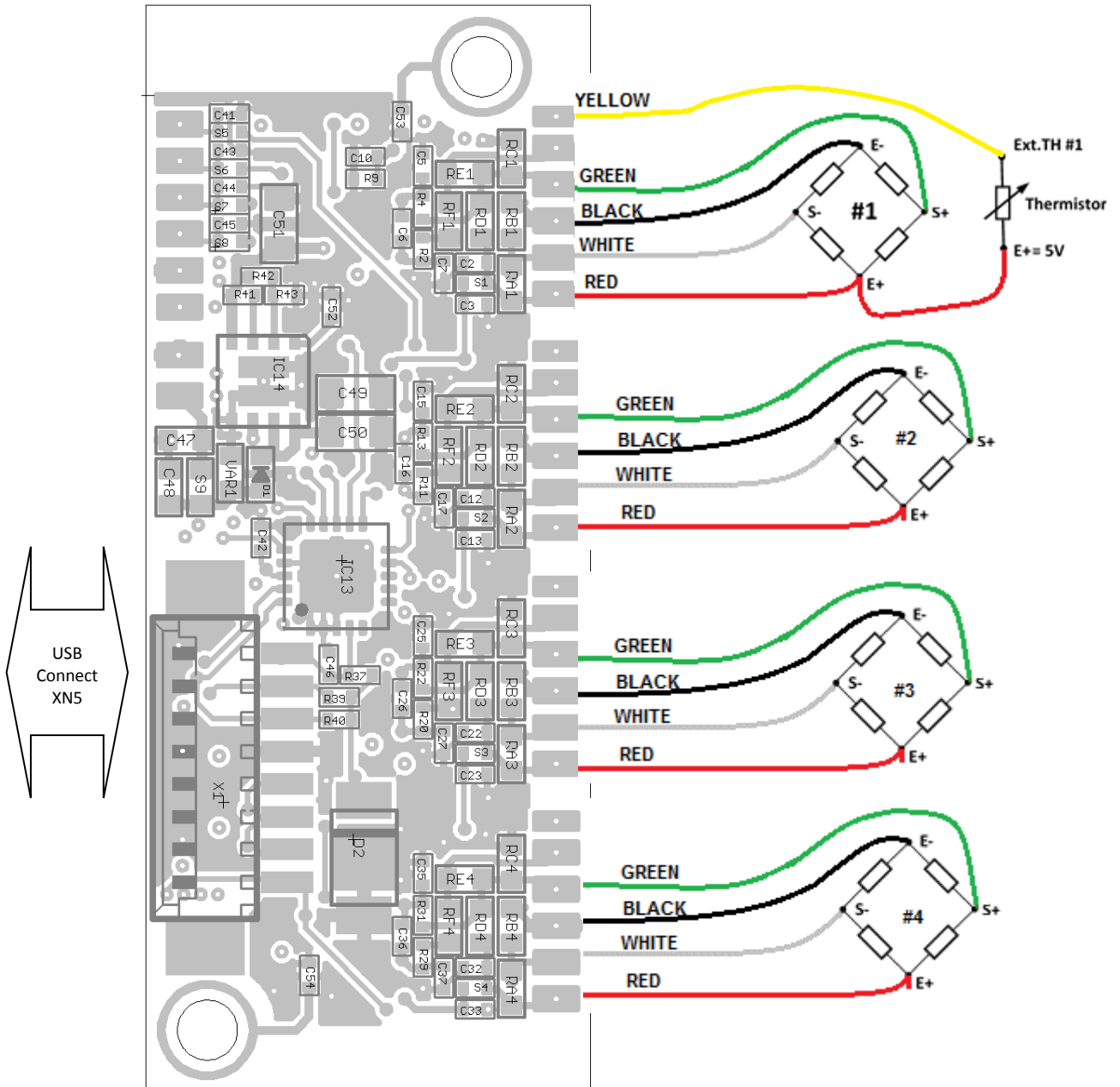
With: $2 < OUTgain < 9$ f_c in Hz $C8/C18/C28/C38=470pF$
 OUTgain is part of final gain (see user guide for more details)

See XN5_Bandwidth_Calculator for more details:
http://twist.texense.com/download/XN5_Bandwidth_Calculator.xls

Example with four full bridge:

Extern thermistor #1 example:

The extern thermistor must be placed close to the bridge.



For complete information, contact us at info@texense.com